

## Weigh Before and After Methods

You can also determine the amount of material applied by taking before and after weights:

1. Place a known weight of granules in the hopper, conduct a trial run, and reweigh the granules remaining in the spreader.
2. If a large scale is available, determine the amount applied by weighing before and after the application. The difference in weight is the amount of granules applied to the calibration area.

### Example:

You put 2 pounds of granules in a drop spreader that has a swath width of 2 feet. After applying the product to a 50-foot test course, you recover 1.75 pounds of granules from the spreader. The calibrated rate is 0.25 pounds per 100 square feet, or 2.5 pounds per 1,000 square feet.

### Rotary Spreader

To ensure uniform coverage with a rotary spreader, apply the product at half the labeled rate in two passes over the area. This is especially important if the distribution pattern is not symmetrical. The goal for calibrating a rotary spreader, therefore, is to verify an application rate that is within 10 percent of one-half the labeled rate.

Collection devices can be used to calibrate a rotary spreader. However, commercially available shrouds that are attached to the spreader are compatible only with a limited number of spreader makes and models. Other devices like plastic bags secured to the bottom of the spreader can interfere with product delivery and cause inaccurate results. Determine the effective swath width before attempting to calibrate a rotary spreader with a collection device.

The easiest way to check the application rate of a rotary spreader is to load the spreader with a weighed amount of product. Rely on your experience with the spreader to select a test setting that will deliver one-half the labeled rate. (Note: spreader settings are not linear; therefore, using a setting number that is half the number recommended on the product label will not result in half the application rate.) Apply the material over a measured distance, and then weigh the product remaining in the spreader to determine the rate actually applied per 1,000 square feet. Use a linear distance that can be easily converted to 1,000 square feet based on the spreader's effective swath width (see the following table).

## Distance and Effective Swath Width for Rotary Spreaders to Equal 1,000 Square Feet

Effective Swath Width (feet)	Distance (feet)
6	167
8	125
10	100
12	84
14	72

Multiply the amount collected in covering 1,000 square feet by 43.56 to determine the application rate in lbs. per acre.

Compare the rate delivered by the test run (your application rate) with the label rate. Make appropriate changes in the size of the gate opening and repeat the procedure until your application rate is within 10 percent of the recommended rate.

### Example:

A turf herbicide is to be applied at 80 pounds per acre. To help ensure a more uniform application, the herbicide will be applied in two passes. In this case, the spreader should be calibrated to apply the material at 40 pounds per acre. The effective swath width is 12 feet. Two pounds (908 grams) of product are loaded into the spreader, which is then pushed over an 84-foot calibration course. The amount remaining in the spreader weighs 426 grams. The difference between the original weight and post-calibration weight is 482 grams, or 1.06 pounds (482 grams divided by 454 grams per pound). The spreader is calibrated to apply 1.06 pounds per 1,000 square feet. This is equivalent to 46.2 pounds per acre (1.06 pounds per 1,000 square feet times 43.56). This is outside the range of 36 to 44 pounds per acre, based on the desired rate of 40 pounds per acre plus or minus 10 percent. Because the calibrated rate is too high, the gate opening should be reduced and the calibration process repeated.

Another method is to use the weight of material collected from the box in the center of the pattern distribution test in one of the following equations:

### For weight in grams:

$$\frac{\text{grams material collected in box}}{\text{area of box (sq. ft.)} \times \text{\# of passes}} \times 2.2 = \frac{\text{lbs. product}}{1,000 \text{ sq. ft.}}$$

### For weight in ounces:

$$\frac{\text{ounces material collected in box}}{\text{area of box (sq. ft.)} \times \text{\# of passes}} \times 62.5 = \frac{\text{lbs. product}}{1,000 \text{ sq. ft.}}$$

If the calibrated rate is not within 10 percent of the recommended rate, adjust the gate opening and reapply product to the center box in 3 to 5 passes.